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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,900	11/21/2003	Krishnan Chari	86421CPK	1667

7590 03/06/2006

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EXAMINER
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WANG, GEORGE Y

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/718,900	CHARI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	George Y. Wang	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 and 21-27 is/are pending in the application.
- 4a) Of the above claim(s) 21-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Newly submitted claims 21-27 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

This application contains claims directed to the following patentably distinct species:

(1) the specifics of a display sheet comprising an imaging layer where the domains of the LC material comprise a mixture of at least two populations comprising a first embodiment corresponding to claims 1-9;

(2) the specifics of a display sheet comprising an imaging layer where the domains of the LC material comprise a mixture of substantially just two populations comprising a first embodiment corresponding to claims 21-27.

The species are independent or distinct because the species are directed to separate and distinct embodiments that would require separate searches.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 21-27 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by.  
Stephenson (U.S. Patent No. 6,359,673).

4. As to claim 1, Stephenson discloses a display sheet (fig. 5, ref. 10) comprising an optional substrate (30) for carrying layers of material, an imaging layer (11) and comprising a substantial monolayer of isolated domains of liquid-crystal material dispersed in a continuous matrix, said liquid-crystal material (12, 14) having a first reflecting state within the visible light spectrum defining an operating spectrum and a second weakly scattering state in said operating spectrum, wherein said states are capable of being interchanged by an electric field, which states are capable of being maintained as a stable state in an absence of an electric field (col. 4, lines 1-9), wherein said domains of liquid-crystal material comprises a mixture of at least two populations, a first population comprising a first liquid-crystal material having a first  $\lambda_{\max}$  and a second liquid-crystal material having a second  $\lambda_{\max}$  wherein there is a difference between said first and said second  $\lambda_{\max}$  of at least 50 nm (referring to yellow and blue populations, col. 6, lines 14-23), first transparent conductors (32) disposed on one side of said

imaging layer, second conductors(40) disposed on an opposite side of said imaging layer.

5. Regarding claim 2, Stephenson discloses a display sheet as recited above where the reflected light from said display sheet when said imaging layer is in the first reflecting state has CIE tristimulus values X, Y and Z that are within 20 percent of each other (fig. 5, ref. 52; col. 5, lines 46-64).

6. As per claim 3, Stephenson discloses a display sheet as recited above where the first liquid-crystal material has a peak reflected wavelength in the range of 561 to 720 nanometers (red, fig. 5, ref. 34) and said second liquid-crystal material has a peak reflected wavelength in the range of 450 to 560 nanometers (either green or blue, ref. 36, 38).

7. Regarding claim 4, Stephenson discloses a display sheet as recited above where said first and said second liquid-crystal material each comprises a dopant having a first and a second concentration (col. 6, lines 20-23), respectively, wherein said first and said second concentration differs such that the pitch of said second liquid-crystal material is smaller than the pitch of said first liquid-crystal material (col. 4, lines 1-9).

8. As to claim 5, Stephenson discloses a display sheet as recited above where said first liquid-crystal material reflects red having  $\lambda_{\max}$  in a range 630 to 720 nm (red, fig. 5, ref. 34).

9. As per claim 6, Stephenson discloses a display sheet as recited above where said first liquid-crystal material reflects red and said second liquid-crystal material reflects green, blue, or cyan (fig. 5, ref. 34, 36, 38; col. 5, lines 46-64).

10. Regarding claim 7, Stephenson discloses a display sheet as recited above where said first liquid-crystal material is red and said second liquid-crystal material is green (fig. 5, ref. 34, 36, 38; col. 5, lines 46-64).

11. As per claim 8, Stephenson discloses a display sheet as recited above where said first (32) and said second conductors (40) are patterned to produce an addressable matrix (col. 5, lines 39-45).

12. As to claim 9, Stephenson discloses a display sheet as recited above where said domains comprise chiral-nematic liquid-crystal material and said continuous matrix comprises gelatin (col. 4, lines 27-43).

***Response to Arguments***

13. Applicant's arguments filed November 14, 2005 have been fully considered but they are not persuasive.

Applicant admits that the prior cited art (Stephenson) "does disclose a polymer-dispersed liquid-crystal-based bi-stable reflective display in which a neutral appearance in the reflective state is obtained by combining the reflections of droplets of cholesteric liquid crystal material doped to give reflections either in the blue, green, and red part of the spectrum or in the blue and yellow part of the spectrum. Stephenson does mention that the polymer-dispersed liquid crystals have good off-axis reflectivity." However, Applicant argues that "Stephenson teaches that domains or droplets of liquid crystal in the light-modulating layer are smaller than the thickness of the layer so that multiple domains overlap, contrary to Applicants' invention."

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "that domains or droplets of liquid crystal in the light-modulating layer are smaller than the thickness of the layer so that multiple domains overlap") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Nowhere in the claims is this feature recited.

Applicant further argues that Stephenson does not mention anything about the effect of using mixtures of domains on the back-scattered intensity in the focal conic

Art Unit: 2871

state and, hence, does not achieve the advantageous results obtained by the present invention. Again, nowhere are these limitations found in the claims themselves.

While Applicant also argues that the Stephenson reference “teaches away” from the invention of claims 3 and 5-7 by having unexpectedly found that the contrast of a display of the type disclosed and claimed is degraded if there is more than a substantial monolayer of cholesteric liquid crystal domains, “[i]t is well settled that a claim is anticipated if each and every limitation is found either expressly or inherently in a single prior art reference. A reference is no less anticipatory if, after disclosing the invention, the reference then disparages it. Thus, the question whether a reference ‘teaches away’ from the invention is inapplicable to an anticipation analysis.” Celeritas Techs. Ltd. v. Rockwell Int’l Corp., 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522 (Fed. Cir. 1998) (citation omitted). In this case, independent claim 1 recites a display sheet for which all the elements are anticipated by the Stephenson reference as discussed above. For dependent claims 2-9, all the elements are also anticipated by the Stephenson reference discussed above. Nowhere in Applicant’s remarks are the specific rejections of the claims or the deficiencies in Stephenson pointed out. As such, the “experimental evidence” provided by Applicant does not provide additional support for the argument against anticipation by Stephenson.

As a result, Applicant’s arguments do not place the application in condition for allowance at this time.



***Conclusion***

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Y. Wang whose telephone number is 571-272-2304. The examiner can normally be reached on M-F, 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

George Y. Wang  
Examiner  
Art Unit 2871

March 1, 2006

  
ANDREW SCHECHTER  
PRIMARY EXAMINER